Fig.1

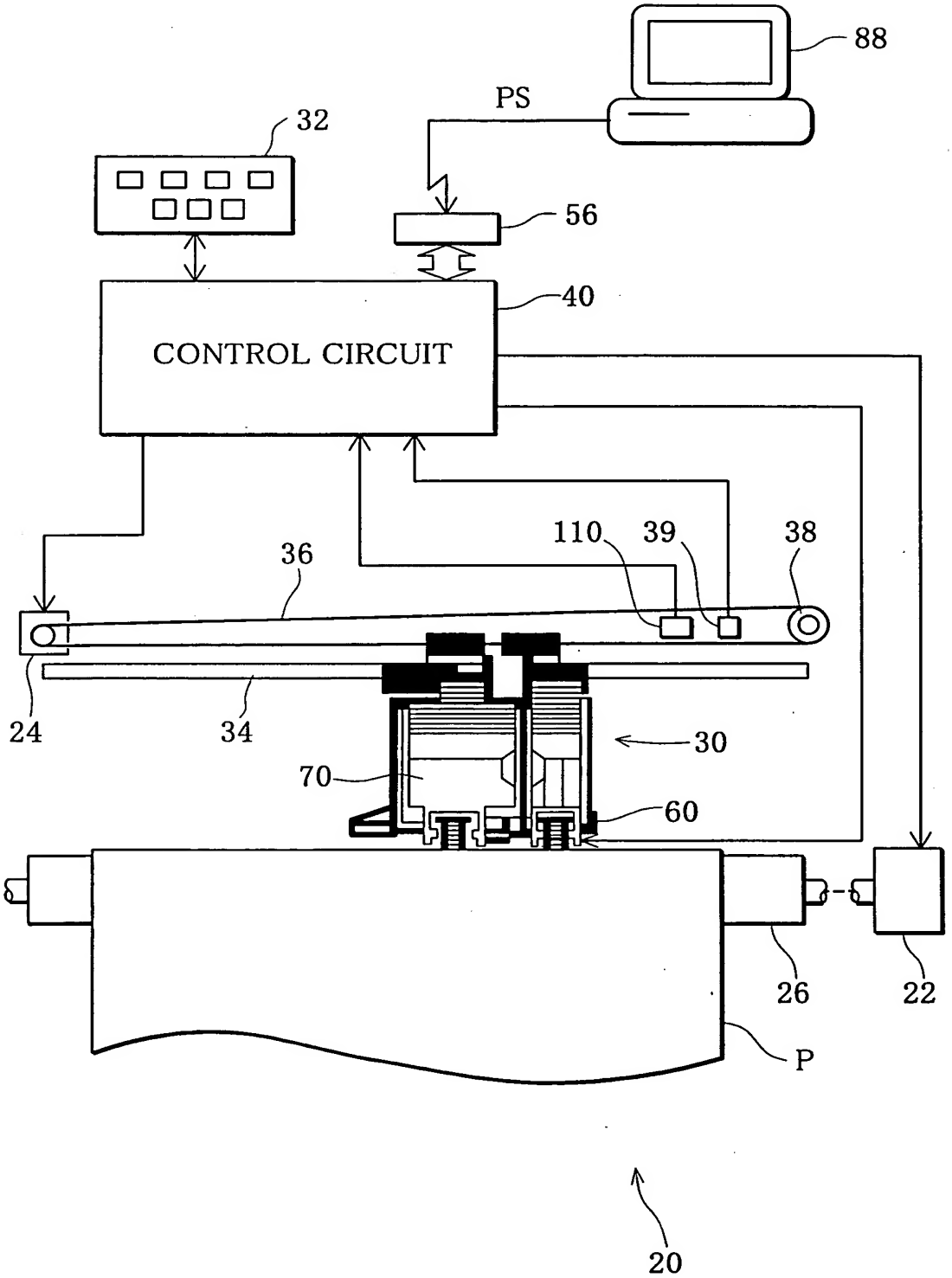

88
PS
32
56
40
CONTROL CIRCUIT
110
39
38
36
24
34
30
70
60
26
22
P
20

Fig.2

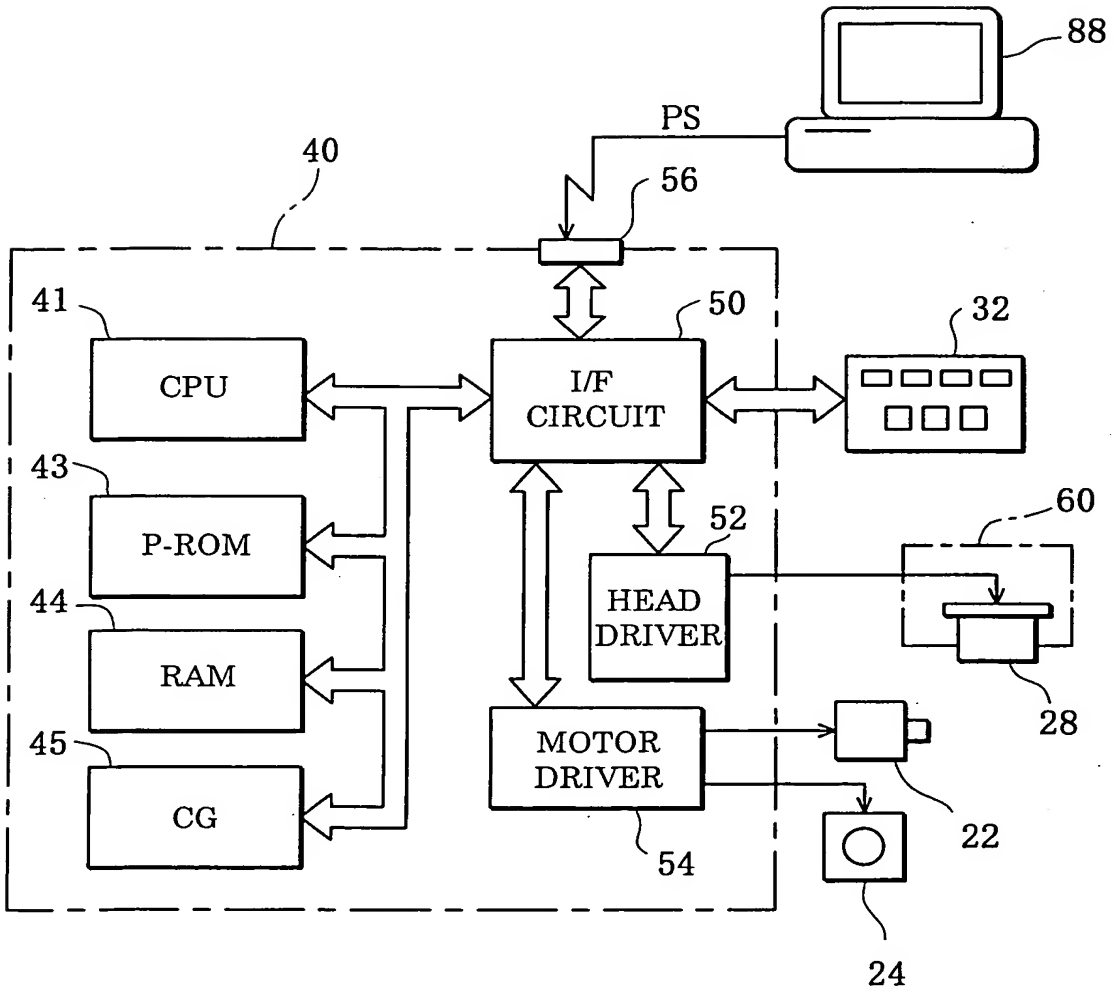

88
PS
40
56
41
50
32
CPU
I/F
CIRCUIT
43
60
52
P-ROM
HEAD
DRIVER
44
RAM
28
45
MOTOR
DRIVER
22
CG
54
24

Fig.3

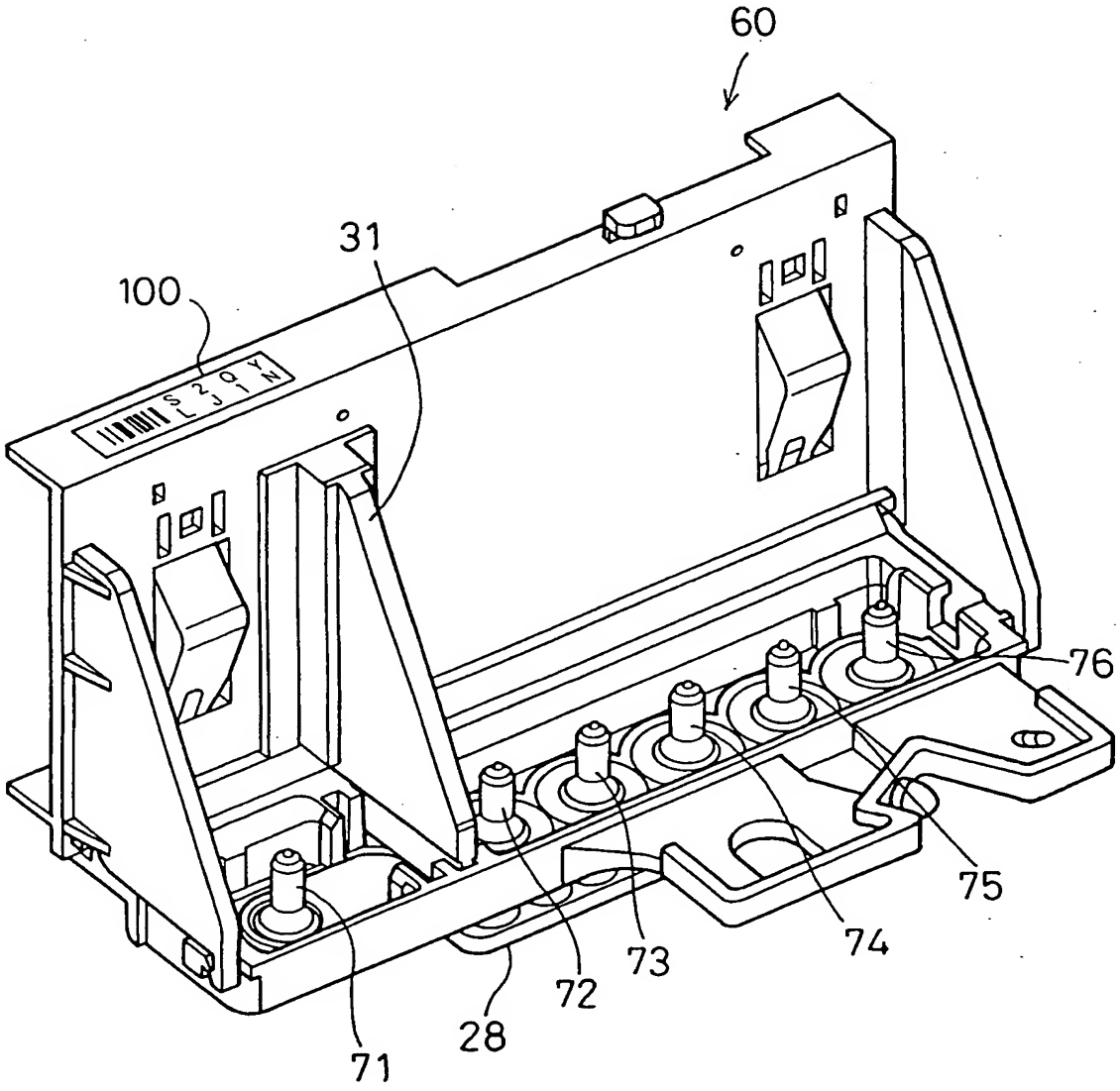


Fig.4

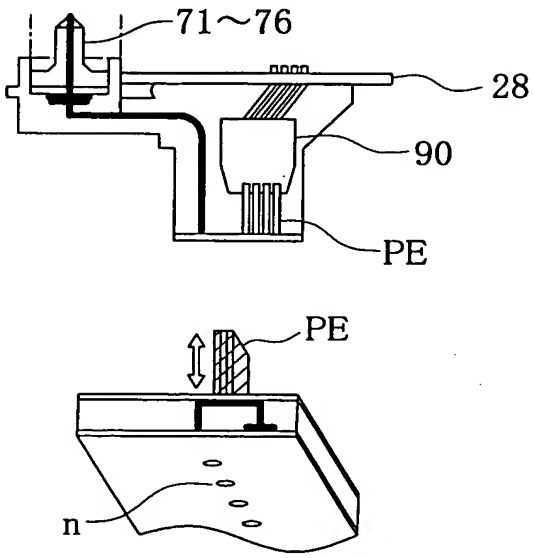


Fig.5(A)

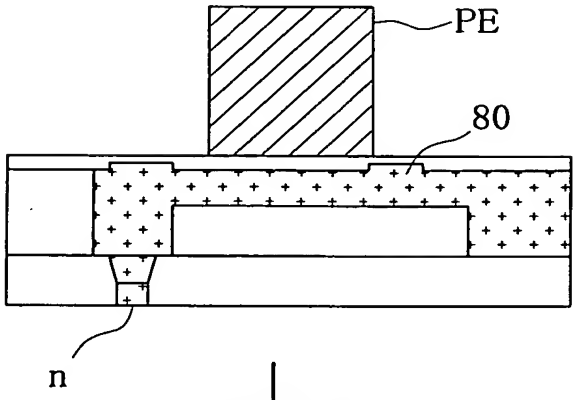


Fig.5(B)

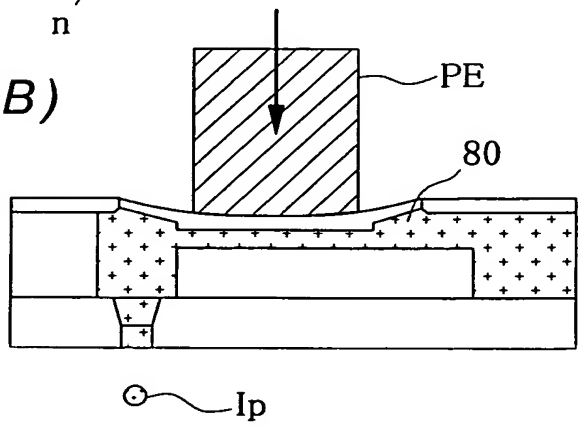


Fig.6

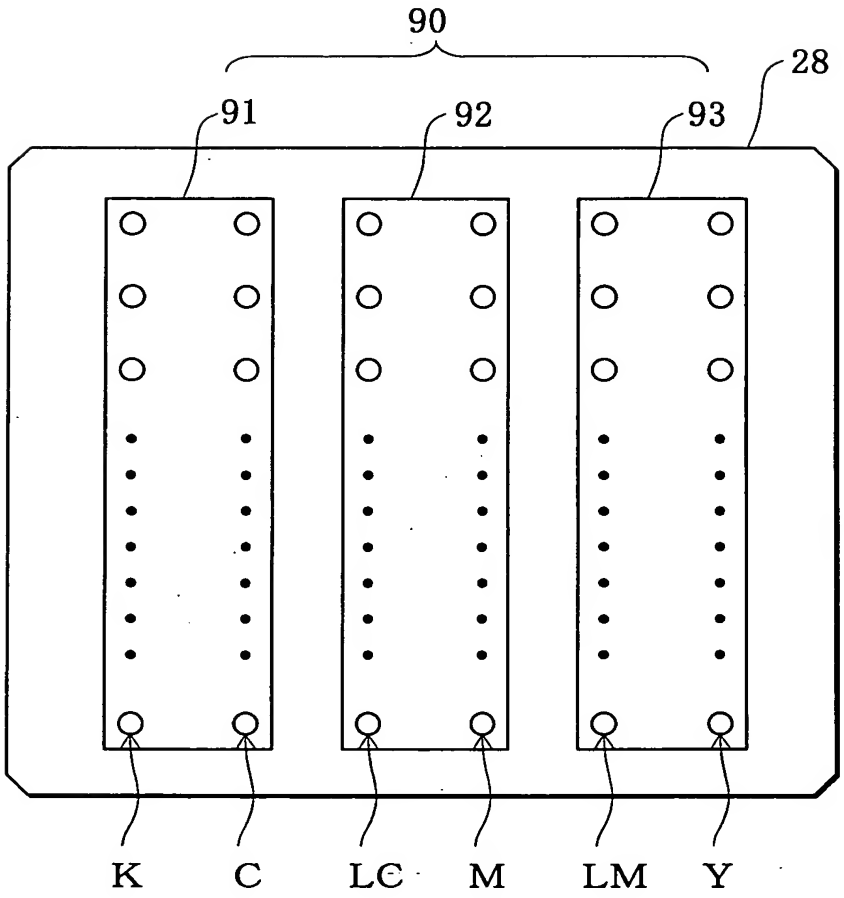


Fig.7

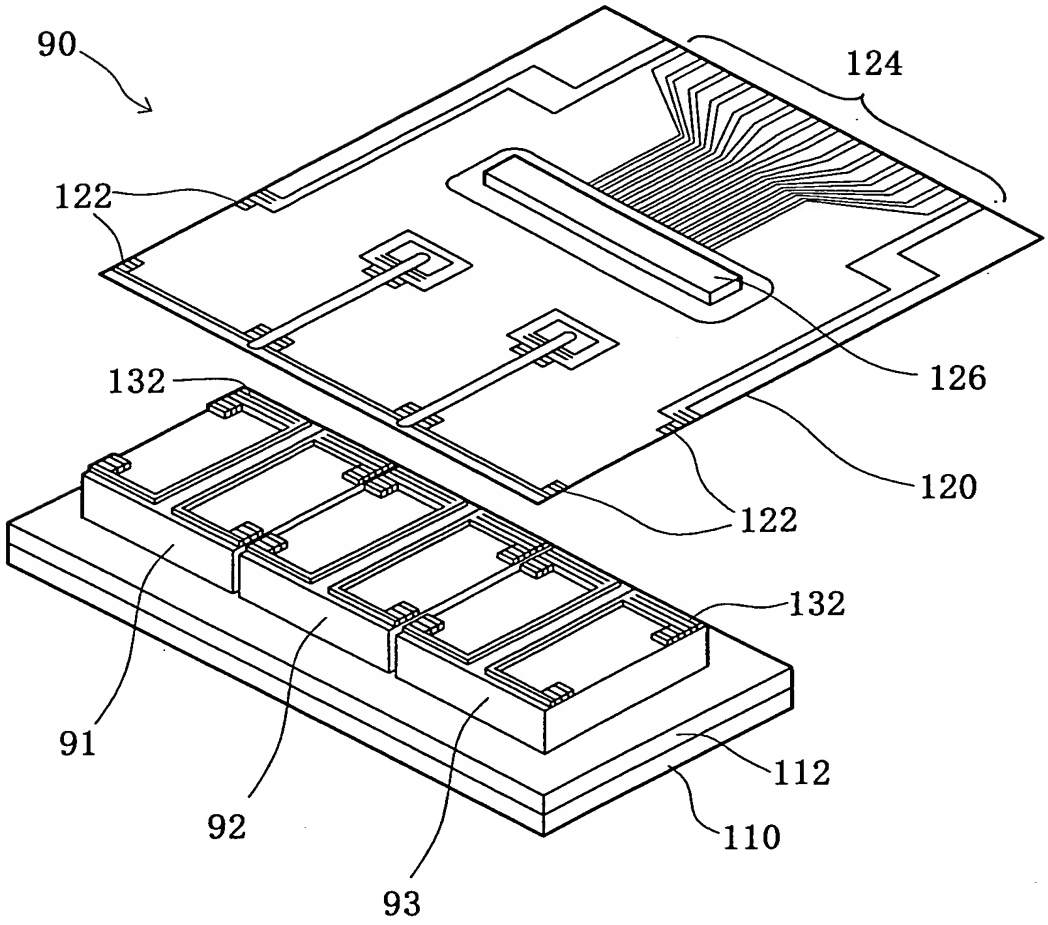


Fig.8

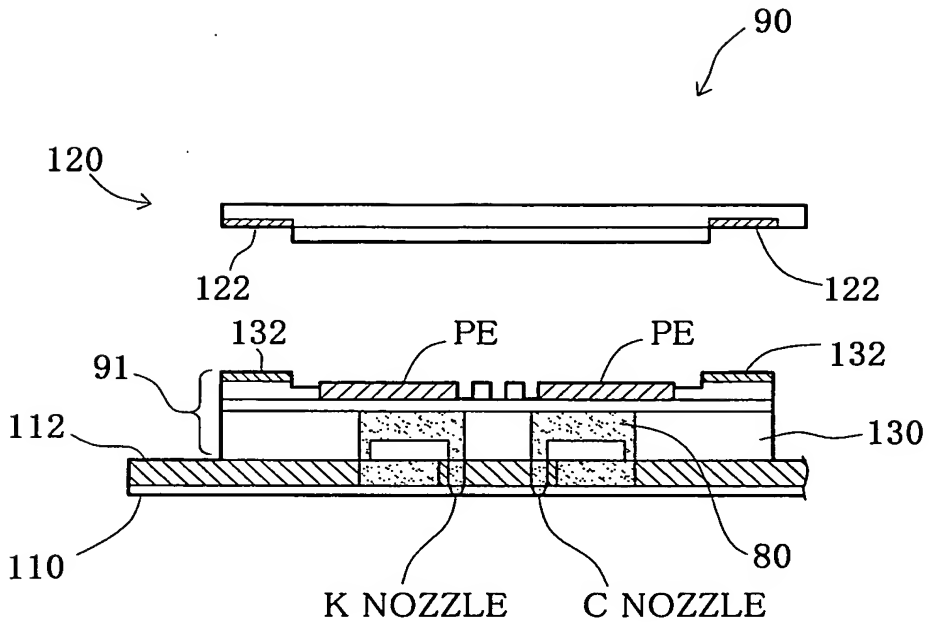


Fig.9

POSITIONAL DEVIATION DURING BI-DIRECTIONAL PRINTING FOR DOTS OF DIFFERENT INKS

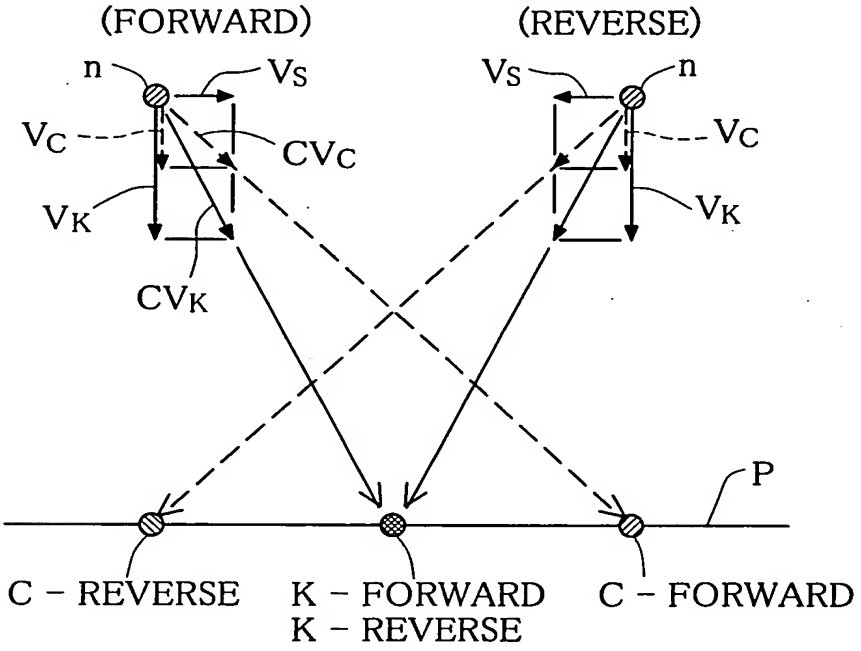


Fig.10

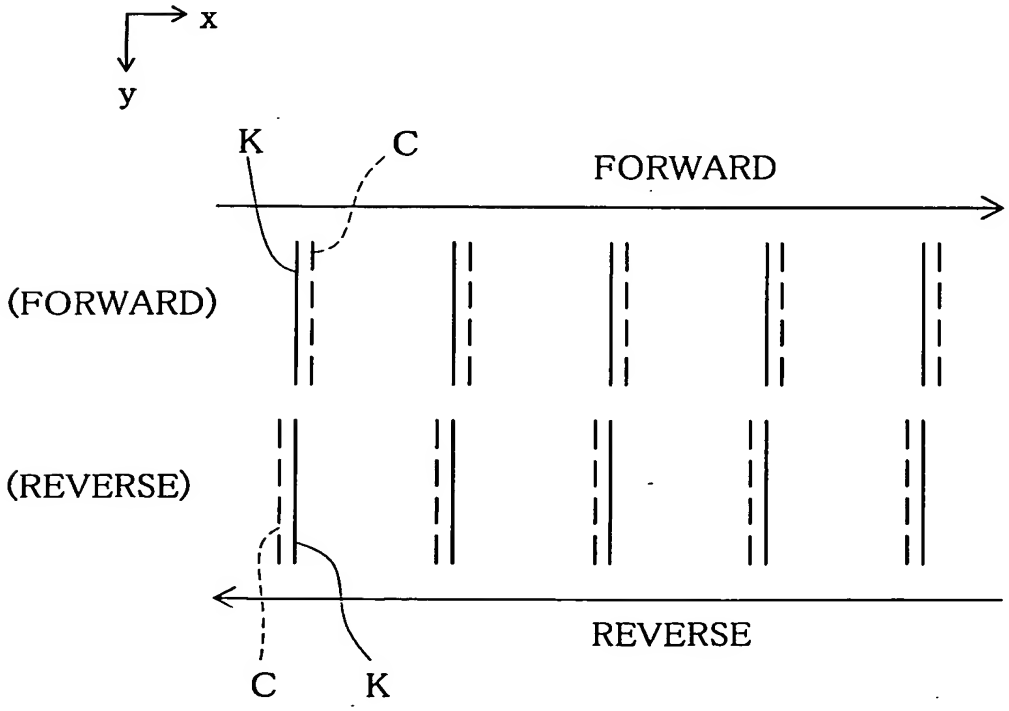


Fig. 11

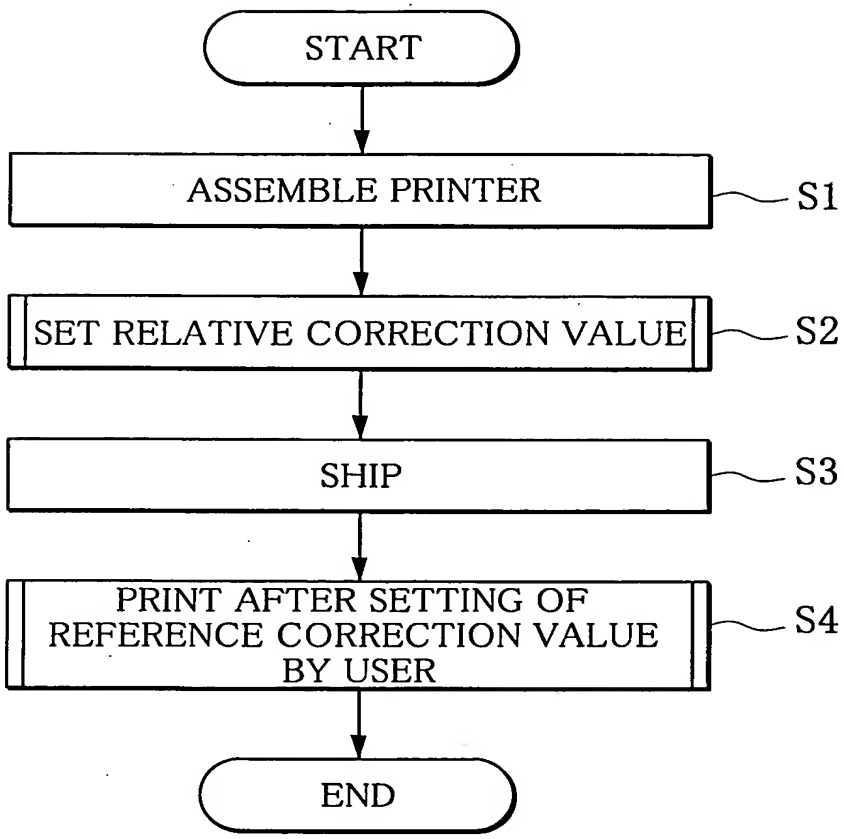

START
ASSEMBLE PRINTER
S1
SET RELATIVE CORRECTION VALUE
S2
SHIP
S3
PRINT AFTER SETTING OF REFERENCE CORRECTION VALUE BY USER
S4
END

Fig. 12

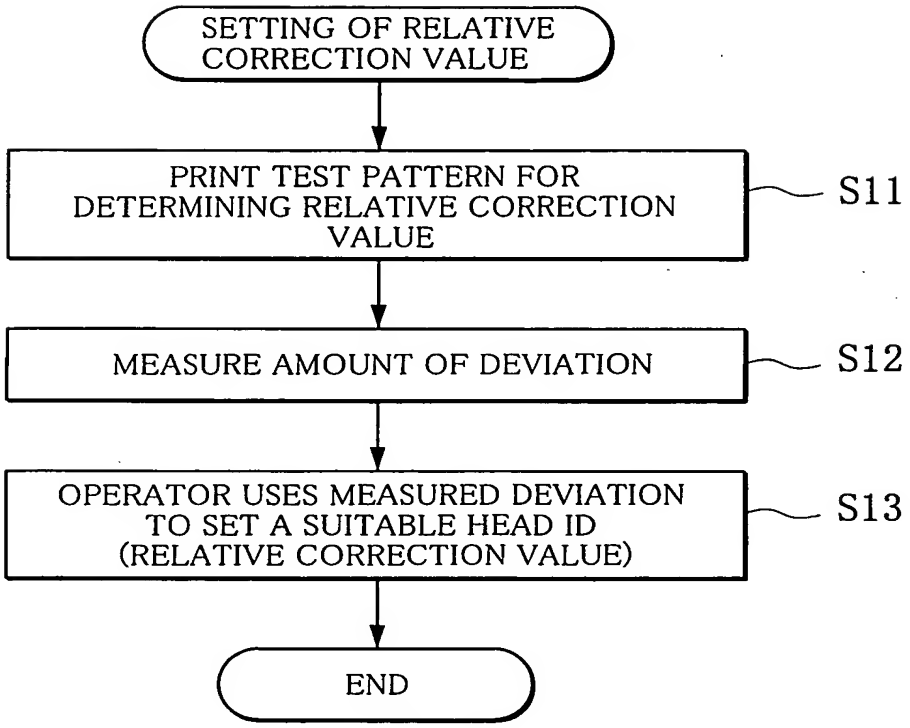

SETTING OF RELATIVE CORRECTION VALUE
PRINT TEST PATTERN FOR DETERMINING RELATIVE CORRECTION VALUE
S11
MEASURE AMOUNT OF DEVIATION
S12
OPERATOR USES MEASURED DEVIATION TO SET A SUITABLE HEAD ID (RELATIVE CORRECTION VALUE)
S13
END

Fig. 13

TEST PATTERN FOR DETERMINING RELATIVE CORRECTION VALUE

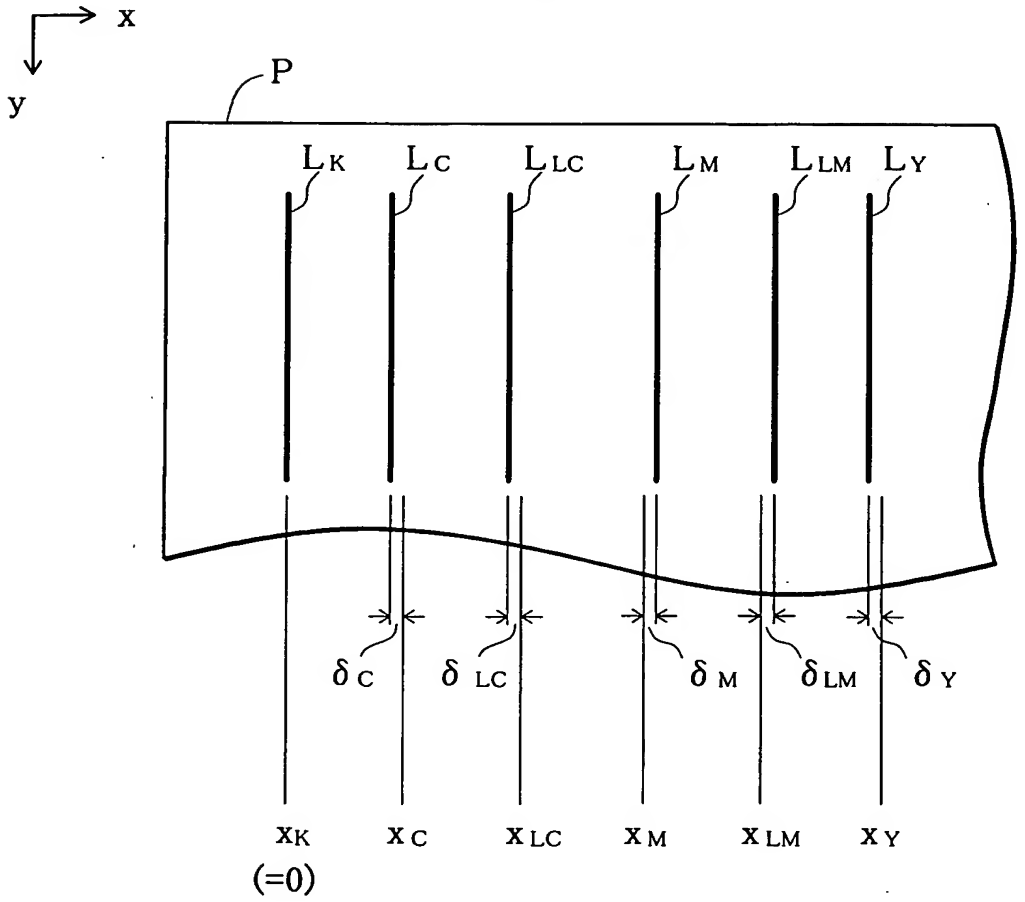


Fig. 14

HEAD ID	Δ (μm)
1	−35.0
2	−17.5
3	0
4	+17.5

Fig. 15

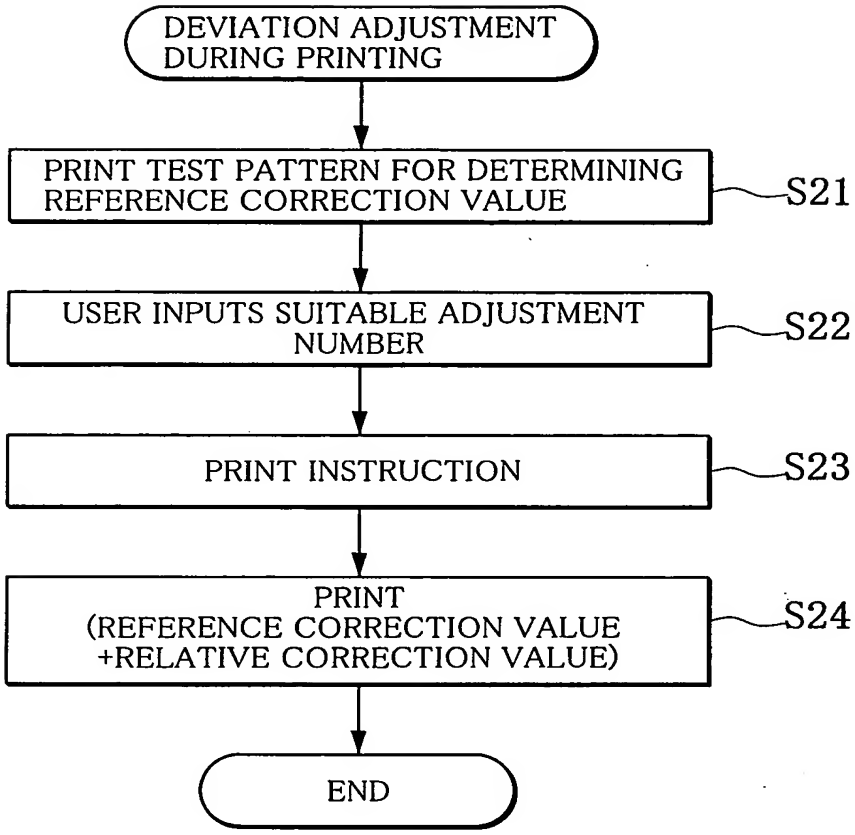

DEVIATION ADJUSTMENT DURING PRINTING
PRINT TEST PATTERN FOR DETERMINING REFERENCE CORRECTION VALUE
S21
USER INPUTS SUITABLE ADJUSTMENT NUMBER
S22
PRINT INSTRUCTION
S23
PRINT (REFERENCE CORRECTION VALUE +RELATIVE CORRECTION VALUE)
S24
END

Fig. 16

TEST PATTERN FOR DETERMINING
REFERENCE CORRECTION VALUE

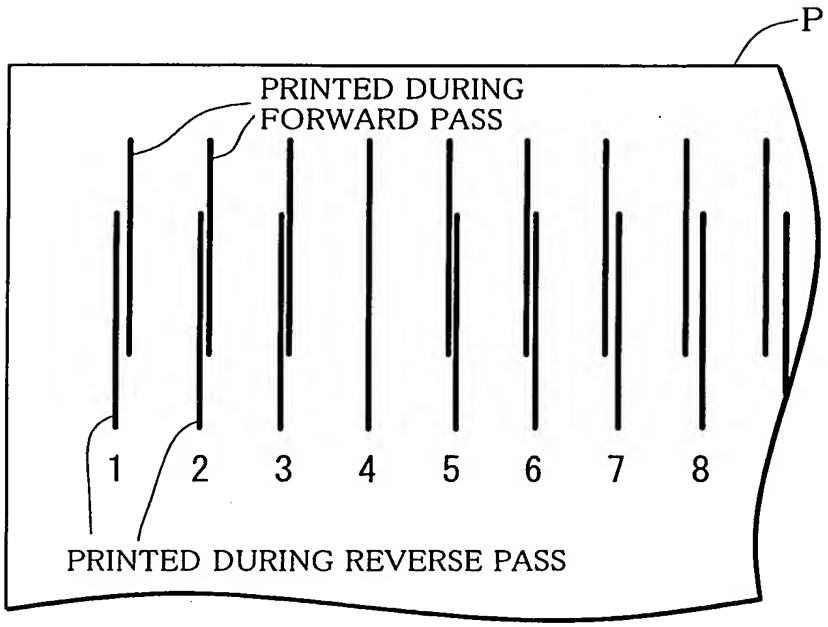


Fig. 17

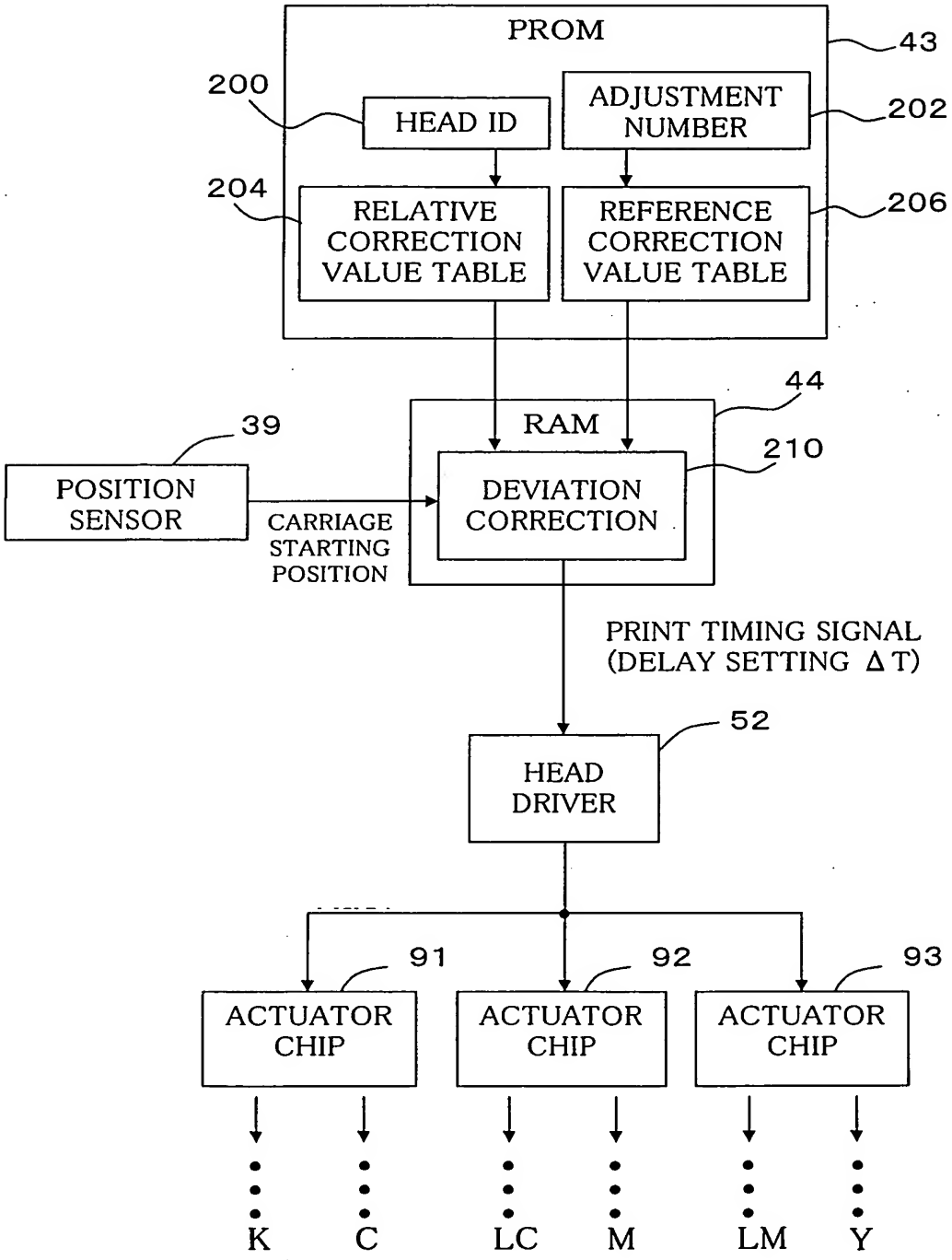

PROM
43
200
HEAD ID
ADJUSTMENT NUMBER
202
204
RELATIVE CORRECTION VALUE TABLE
REFERENCE CORRECTION VALUE TABLE
206
44
RAM
39
210
POSITION SENSOR
CARRIAGE STARTING POSITION
DEVIATION CORRECTION
PRINT TIMING SIGNAL (DELAY SETTING ΔT)
52
HEAD DRIVER
91
92
93
ACTUATOR CHIP
ACTUATOR CHIP
ACTUATOR CHIP
K
C
LC
M
LM
Y

Fig. 18(A)

BEFORE ADJUSTMENT

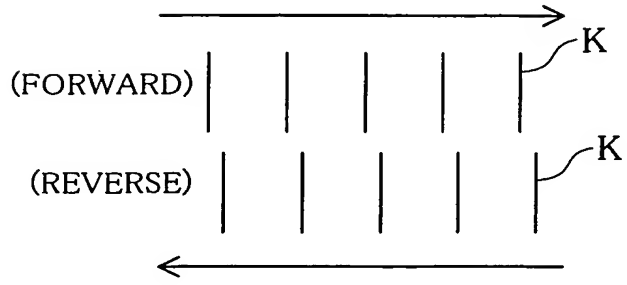


Fig. 18(B)

ADJUSTED BASED ON REFERENCE CORRECTION VALUE (K ONLY)

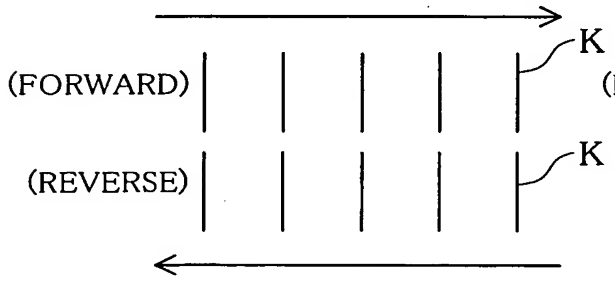


Fig. 18(C)

ADJUSTED BASED ON REFERENCE CORRECTION VALUE (K + C)

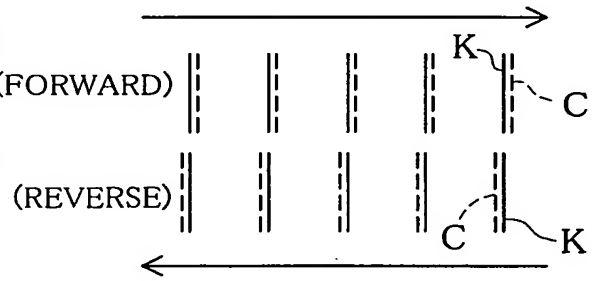
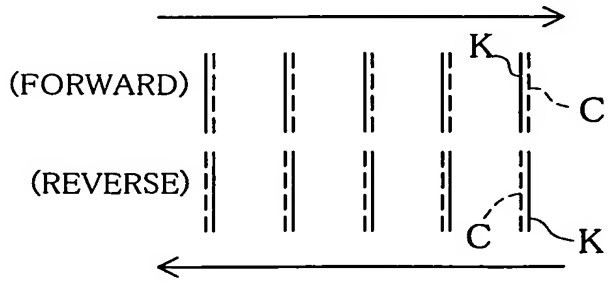


Fig. 18(D)

ADJUSTED BASED ON REFERENCE + RELATIVE CORRECTION VALUES (K + C)



K DOTS AND C DOTS ARE THE TARGET OF ADJUSTMENT (RELATIVE CORRECTION VALUE $\Delta = -\delta c$)

Fig.19(A)

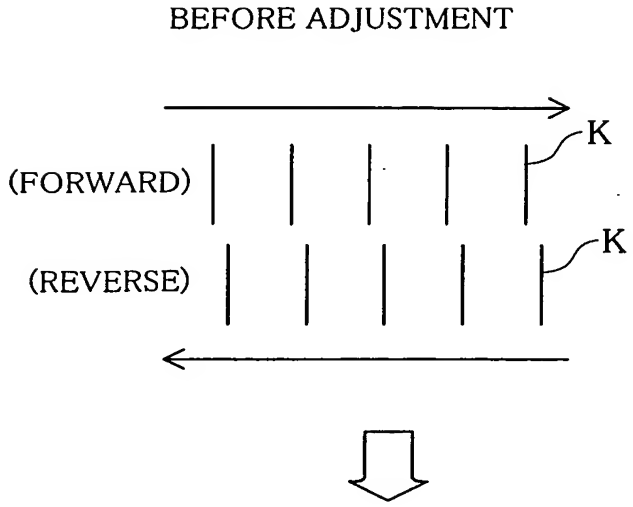


Fig.19(B)

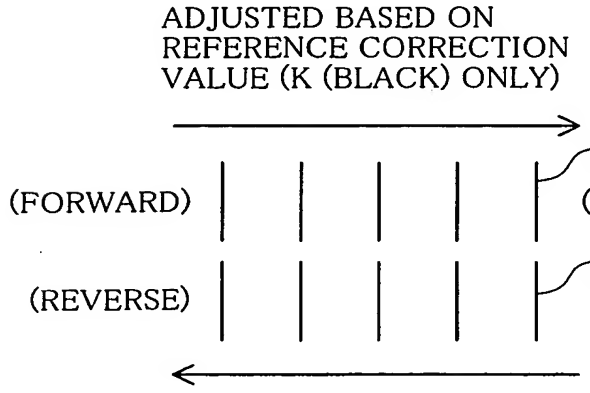


Fig.19(C)

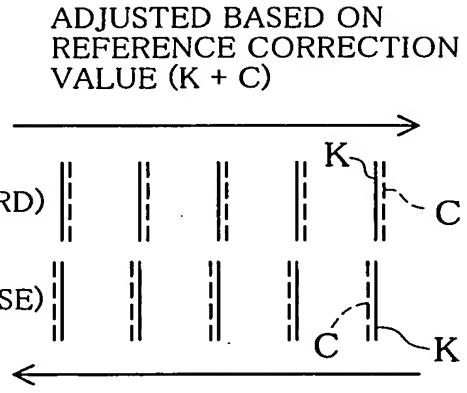


Fig.19(D)

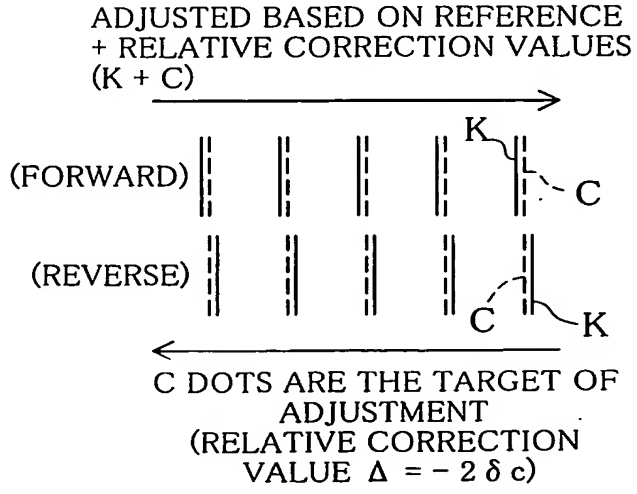


Fig.20

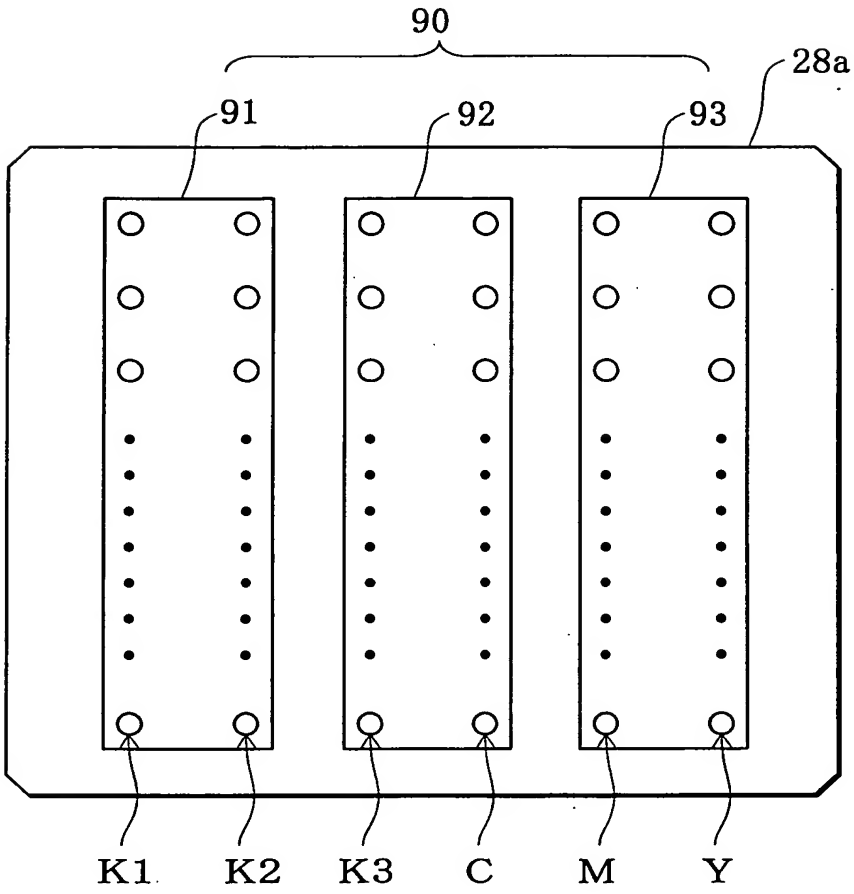
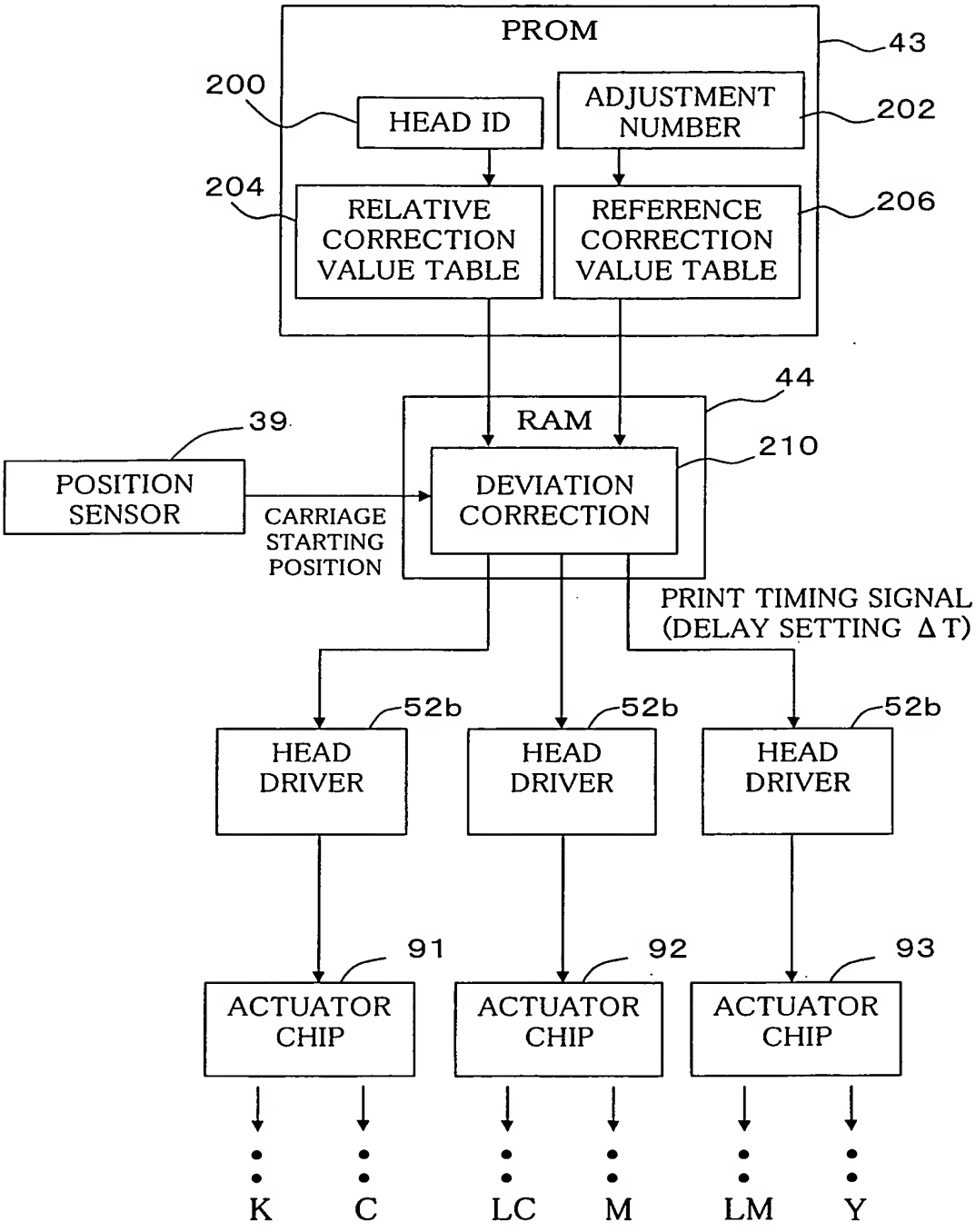


Fig.21


PROM
43
200
HEAD ID
ADJUSTMENT NUMBER
202
204
RELATIVE CORRECTION VALUE TABLE
REFERENCE CORRECTION VALUE TABLE
206
44
RAM
39
210
POSITION SENSOR
CARRIAGE STARTING POSITION
DEVIATION CORRECTION
PRINT TIMING SIGNAL (DELAY SETTING ΔT)
52b
52b
52b
HEAD DRIVER
HEAD DRIVER
HEAD DRIVER
91
92
93
ACTUATOR CHIP
ACTUATOR CHIP
ACTUATOR CHIP
K
C
LC
M
LM
Y

WAVEFORMS OF BASE DRIVE SIGNAL IN THIRD EMBODIMENT

Fig.22(a)

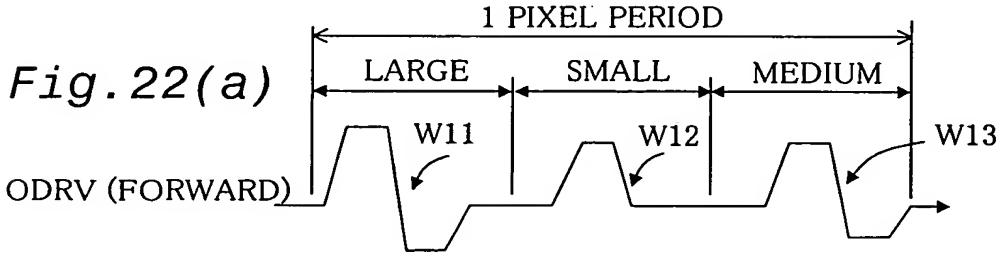


Fig.22(b)

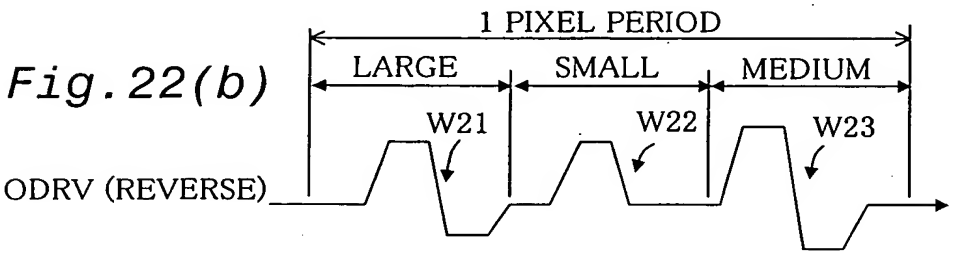


Fig.23

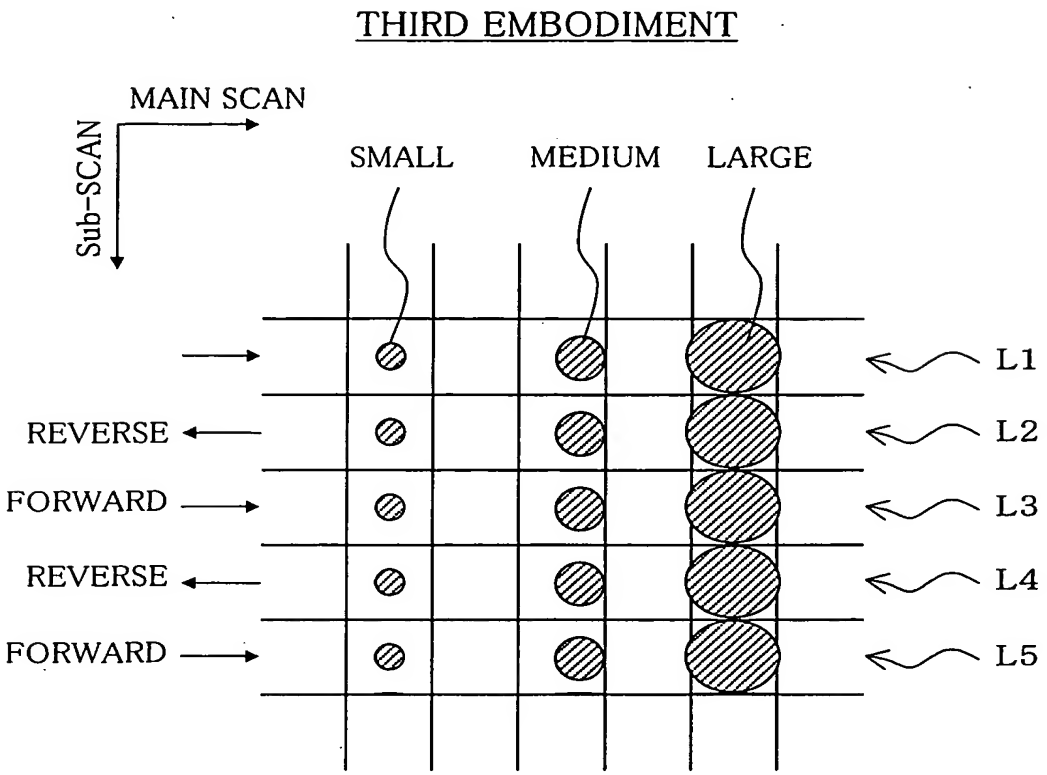

THIRD EMBODIMENT
MAIN SCAN
Sub-SCAN
SMALL
MEDIUM
LARGE
REVERSE
FORWARD
REVERSE
FORWARD
L1
L2
L3
L4
L5

Fig.24

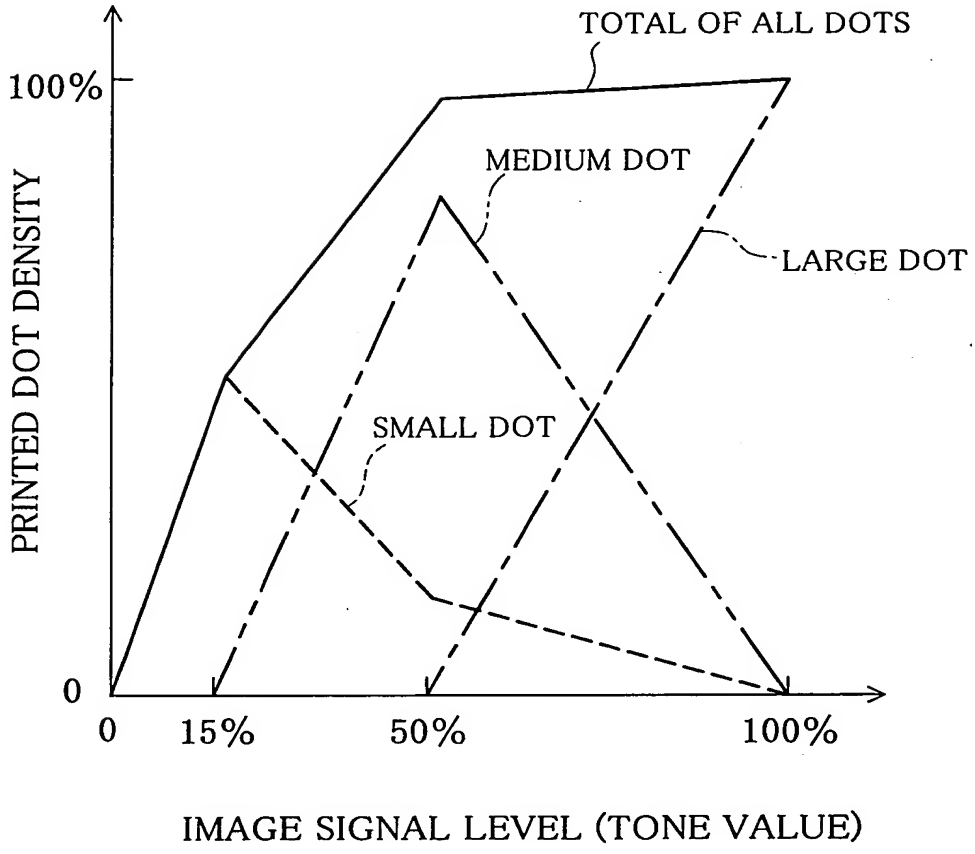
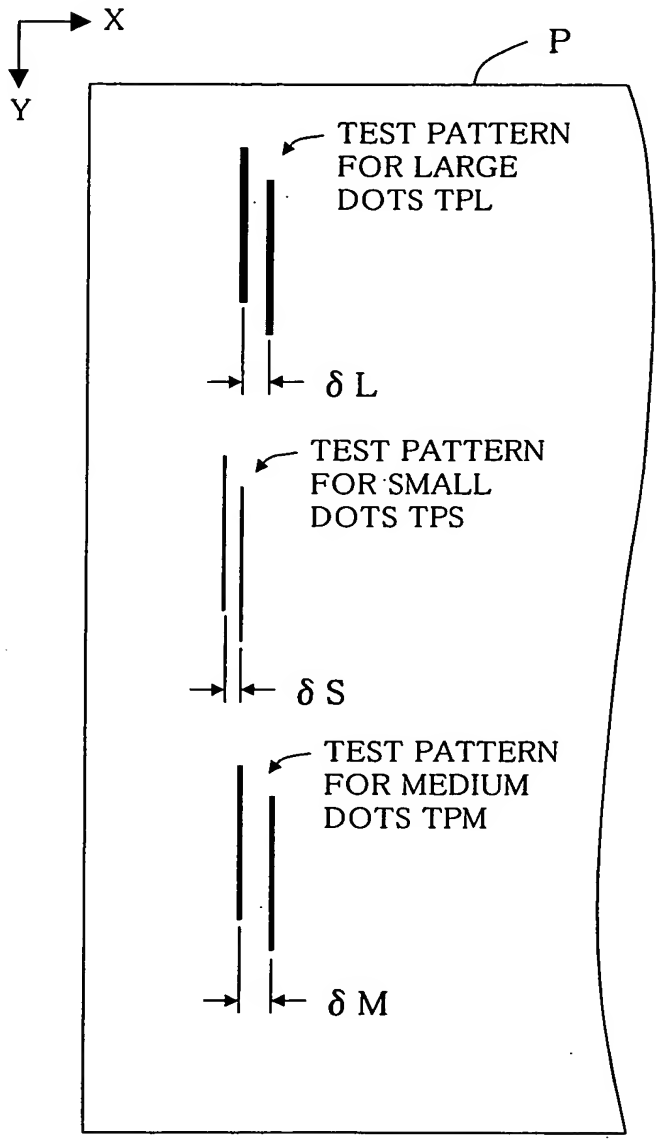

TOTAL OF ALL DOTS
100%
MEDIUM DOT
LARGE DOT
PRINTED DOT DENSITY
SMALL DOT
0
0
15%
50%
100%
IMAGE SIGNAL LEVEL (TONE VALUE)

Fig. 25

TEST PATTERN FOR DETERMINING RELATIVE CORRECTION VALUES



RELATIVE CORRECTION VALUE FOR SMALL DOTS: $\Delta S = (\delta S - \delta L)$
RELATIVE CORRECTION VALUE FOR MEDIUM DOTS: $\Delta M = (\delta M - \delta L)$

Fig.26(A)

BEFORE ADJUSTMENT (LARGE DOTS)

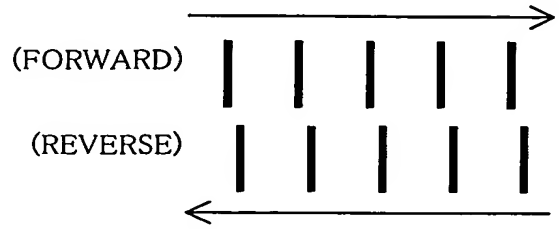


Fig.26(B)

ADJUSTED BASED ON REFERENCE CORRECTION VALUE (LARGE DOTS ONLY)

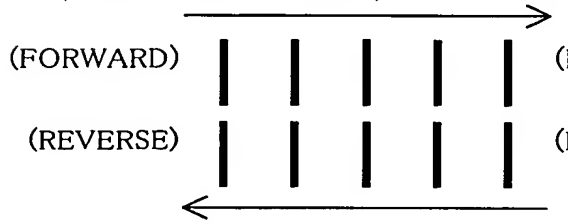


Fig.26(C)

ADJUSTED BASED ON REFERENCE CORRECTION VALUE (LARGE DOTS + SMALL DOTS)

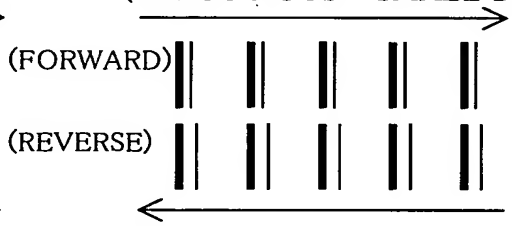
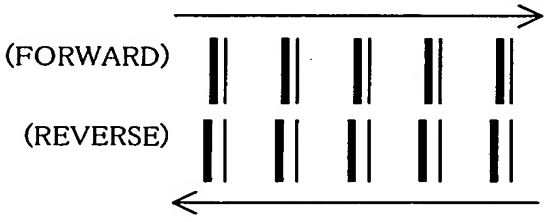


Fig.26(D)

ADJUSTED BASED ON REFERENCE + RELATIVE CORRECTION VALUES (LARGE DOTS + SMALL DOTS)



SMALL DOTS ARE THE TARGET OF ADJUSTMENT